

PSYCHE.

NOTES ON THE ACRIDIDÆ OF NEW ENGLAND.—II.—TRYXALINÆ.—VII.

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10. MECOSTETHUS Fieb.

Mecostethus Fieber 1853. Syn. d. eur. Orth., p. 10.

This genus is sharply distinguished from the other New England Tryxalinae by the structure of the tegmina which possess a highly-developed intercalary vein. In this particular it is closely allied to the Oedipodinae. This vein in the male is provided with a rasp for stridulating, a structure found in some Oedipodinae also. The pronotum also is somewhat Oedipodine in character, having the metazona longer than the prozona; and the meeting of the face and vertex is rounded in the female. Referred at first to *Arcyptera* and later to *Stethophyma* (incorrectly *Stethophyma*,—see Brunner, Prod. eur. Orth., p. 139), our species belong to this genus and one of them is very similar to the European one forming the type. Our three species were described by Scudder and have been thought by some authors to be but varieties of one, but they are undoubtedly distinct.

13. *Mecostethus lineatus* Scudd.

Figs. 13, 13a, 13b.

Arcyptera lineata. Scudder, 462.—1862.

Stethophyma lineata. Thomas, 98. Fernald, 38.

Stethophyma lineata. Morse, 105.

This species is very similar to *M. grossus* of Europe. It is the most common one in the southern part of New England while *gracillis* is probably more often met with in the northern States. In addition to the characters given in the key the present species differs from the others in having the tegmina much longer and narrower proportionally and their dorsal (anal) portion is more nearly of the same tint as the rest. The teeth of the rasp are very low and dull. In coloration the females are very much darker than those of *gracillis*, being of a deep purple brown. (See also remarks under other species.)

About 200 specimens show the following measurements:

Antenna.	Hind fem.	Teg.	Body.	Total.
♂ 11-12	14.5-18	21-26.5	23-27	28-32
♀ 10-11.5	18-21	26-31.5	31-38	35-41.5

The abdomen of the ♂ usually passes the end of the hind femora by 1 mm.; that of the ♀ by 3 mm.

Though somewhat local this species is rather common in southern New England in wet, sedgy meadows along rivers and brooks and in swampy tracts where water often stands on the ground for days at a time. It has a powerful, swift, and sustained flight, often prolonged for one or two hundred feet in a straight, slightly rising, then gradually descending course. It is quite shy, taking flight readily, and rising rapidly when flushed, and is best secured by marking down, following up, and capturing while on the ground or on starting to rise. The ♀ is more difficult to flush than the ♂ and seems to be less abundant; I have captured over 200 specimens but in ordinary collecting only about a tenth as many ♀ as ♂. It may be looked for from the middle of July till the end of the season; I have taken it at Readville, Mass., July 21, ♂, ♀, yg.; Sherborn, Mass., Oct. 6, ♀; and on intermediate dates at Newtonville, Mass., and North Haven and Thompson, Conn. Mr. Scudder reports it from Andover and Williamstown, Mass., and Norway, Me. (Dist. Ins. N. H.).

14. *Mecostethus gracilis* Scudd.

Fig. 14.

Arcyptera gracilis. Scudder, 463, — 1862.

Stethophyma gracilis. Thomas, 99.

Stethophyma gracilis. Morse, 105.

This species may be readily distinguished from *lineatus*, which it most resembles in the form of the pronotum, by the absence of a pale streak on the base of the tegmina near the anterior margin; by the more compressed form of the body, especially of the head and prozona; the smaller size; the broader tegmina, which have the internal border noticeably expanded; and in the case of the male by the height of the teeth of the rasp, which are as high as wide and acutely pointed. (See *platyp-terus* for comparison with that species).

Antenna.	Hind fem.	Tegmina.	Teg. > Hind fem.
♂ 9-10	12-14	16.5-21	3-5
♀ 8.5-9.5	14.5-16	17-23.5	-2.5-+4
	Body	Total.	
	19-23	22.5-28	
	26-33.5	24-31.6	

The tip of the abdomen in the ♂ usually reaches just about to the tip of the hind femora; in the ♀ exceeds them by half the length of the ovipositor, one-and-a-half mm. It will be seen that the tegmina of the ♀ are very variable in length.

This species is not uncommon in the northern States, even plentiful locally, but rather shy, taking readily to wing and flying two or three rods. Its flight is straight and it drops rather suddenly into the grass. On the summit of Greylock Mt., where most of my specimens were procured, it was rather difficult to distinguish from *Camnula pellucida* when flying. Both sexes fly well but the ♂ is the more active,

seeming three or four times as plentiful. I have found it in wet, sedgy meadows and bushy swamps, and on mountain-tops. On Greylock it is common in the low bushes and grass of the extreme summit; on Washington in the sedgy area called the "cow-pasture" or "Semidea plateau." Its note, a fine, dry "scãpe," is the loudest produced by any of our Tryxalinae, and can be heard at a distance of two or three rods. A description and notation of it will be found in Scudder's Distribution of Insects in N. H. and the 23rd report of the Entomological Society of Ontario.

I have taken it in the following localities: Norway, Me., Aug. 16, 2 ♂; Montgomery, Vt., July 18, 2 ♂, 1 ♀; Newport, Vt., 2 ♂; Greylock Mt., Adams, Mass., Aug. 17, 80 ♂, 22 ♀. Mr. Scudder reports it abundant in Jefferson and other parts of the White Mts., and I have found it not uncommon on the summit of Mt. Washington in early Sept.

15. *Mecostethus platypterus* Scudd.

Figs. 15, 15a, 15b.

Arcyptera platyptera. Scudder, 463.—1862.

Stethophyma platyptera. Thomas, 99.

Stethophyma platyptera. Morse, 105.

This species, while of a darker, less yellowish, brown, is very similar in coloration to *gracilis*. The prosteronum is less elevated than in either *lineatus* or *gracilis*, being scarcely

more than strongly convex. In the male, the teeth of the rasp, while larger than in *lineatus*, are less elevated and acutely pointed than in *gracilis*, and the mid-line of the sternum of segment 9 of the abdomen is black. It is also distinguished from *gracilis* by the larger head, and longer and more slender antennae.

Antenna.	Hind fem.	Teg.	Teg. & Hind fem.
♂ 11-12.5	15 16.5	19-21	1-3
♀ 10-11	17.6-20.6	24-25	-1 5-0
	Body.	Total.	
	23-26	26.5-29	
	35-40	34-40	

The end of the abdomen of the ♂ is usually 2 to 3 mm. short of the tip of hind femora; in one ♀ it is of equal length, and in another it exceeds them by 2.5 mm.

Of this species I have seen less than a score of specimens. Of those I took 15 ♂, 1 ♀, at Thompson, Conn., Aug. 4, 25, the ♀ on the latter date, and one ♀ was taken at Sherborn, Mass., by Mr. A. L. Babcock. These are the only localities known to me though it will probably be found to occur over a wide area. At Thompson it is found in company with *lineatus* and is impossible to distinguish from that species when flying, though its flight is somewhat less sustained, and it is decidedly more difficult to flush. It is a less shy and active species than *lineatus*, and the female, while perfectly well able to fly, is very sluggish.—the single one taken personally was secured while endeavoring to start specimens up out of the long sedge of a swamp, and being seen perched upon the grass was at once swept into the net.